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The Connecticut Agricultural Experiment Station.

BULLETIN No. 85.

OCTOBER, 1885.

The object of these Bulletins is to place in the hands of those concerned the results of the station work as promptly as possible.

As required by law, a package of each Bulletin is mailed to every post-office in the State. The package is directed to the Postmaster, with a request to distribute to farmers. The number sent will be increased in any case on application.

The Bulletins are also regularly sent to every newspaper in the State, and to the Secretary of each Agricultural society, Farmer's club and Grange whose address is known to the Station.

The Bulletins will be regularly sent, also, on application, to any private address in Connecticut. Such application, as a rule, must be renewed annually.

To citizens of other States remitting fifty cents, the publications of the current year, including Bulletins and Annual Report, will be mailed as they appear. Applications should be made early in the year.

FERTILIZER ANALYSES.

When not otherwise stated the samples whose analyses are given below were drawn by an agent of the Station.

MURIATE OF POTASH.

1520. Muriate of Potash. Stock of G. B. Forrester, New York. Sampled and sent by S. B. Wakeman, Saugatuck.

1521. Muriate of Potash. Stock of G. B. Forrester, New York. Sampled and sent by W. H. Couch, Saugatuck.

ANALYSES.

	1520	1521
Potash found	53.43	52.65
Potash guaranteed	---	---
Equivalent muriate	84.6	83.39
Cost per ton	\$42.50*	42.50*
Potash costs per pound	3.98 cts.	4.03 cts.

* In New York.

SULPHATE OF AMMONIA.

1527. Sulphate of Ammonia. Sold by E. H. Wardwell, New York. From lot purchased by J. J. Webb, Hamden.

1522. Sulphate of Ammonia. Sold by Mapes' Branch, Hartford.

ANALYSES.

1527. Nitrogen found	20.65, equivalent to ammonia, 25.07
1522. Nitrogen found	20.57, equivalent to ammonia, 24.9
Cost per ton	\$76.00

Nitrogen costs per pound 18.4 cents.

NITRATE OF SODA.

1515. Nitrate of Soda. Sold by Mapes' Formula and Peruvian Guano Co. From stock of Wilson & Burr, Middletown.

ANALYSIS.

	1515
Nitrogen	16.13
Equivalent nitrate of soda	97.9
Cost per ton	\$52.50
Nitrogen costs per pound	16.2 cts.

TANKAGE.

1463. Tankage. Sold by F. S. Andrew & Co., New Haven. Sampled and sent by W. T. Andrew, Tyler City.

ANALYSIS.

	1463
Nitrogen	4.02
Phosphoric acid	4.83
Cost per ton	\$20.00
Valuation per ton	20.67

DRIED BLOOD.

1467. Dried Blood. Sold by Williams, Clark & Co., 101 Pearl street, New York. Stock of E. S. Roberts, East Canaan.

ANALYSIS.

	1467
Nitrogen	11.67
Cost per ton	\$10.00
Nitrogen costs per pound	17.1 cts.

BONE AND BLOOD.

1529. Bone and Blood. Sold by Sperry & Barnes, New Haven. Stock of Sperry & Barnes. Sampled and sent by J. J. Webb, Hamden.

ANALYSIS.

	1529
Nitrogen	7.14
Phosphoric acid	7.39
Valuation per ton	\$34.57

FISH GUANO.

1479. Bowker's Dry Fish. Made by the Bowker Fertilizer Co. Stock of Coburn & Gale, Hartford. Sampled and sent by W. F. Andross, East Hartford. Nitrogen guaranteed, 8 per cent.

1501. Ground Fish. Made by Williams, Clark & Co., New York. Stock of W. C. Reynolds, East Haddam.

1451. Fish Guano. Made by H. Preston & Sons, Greenpoint, L. I. Stock of Smith & Sons, West Cornwall. Guaranteed nitrogen 3.5, phosphoric acid 5.

ANALYSES.

	1479	1501	1451
Nitrogen	8.05	8.68	3.91
Phosphoric acid, soluble93	1.02	2.42
" reverted	4.44	4.12	2.55
" insoluble	2.17	1.23	.84
Cost per ton	\$38.00	\$38.00	\$37.50
Valuation per ton	39.49	40.66	23.19

HOME-MIXED FERTILIZERS.

1538. Home-mixed Fertilizer made by J. J. Webb, Hamden. The sample was drawn by Mr. Webb by taking one tablespoonful from each of fifty-four packages containing 200 lbs. each.

1539. Sample of the above goods, drawn by an agent of the Station from a considerable number of packages.

This Fertilizer is a mixture of Dissolved Bone Black, Bone and Blood, Sulphate of Ammonia and Muriate of Potash. Its mechanical condition is excellent. Analyses of the Dissolved Bone Black or Acid Phosphate (1528), of the Bone and Blood (1529), and the Sulphate of Ammonia (1527), are given above.

The Muriate of Potash used contained 52.25 per cent. of Potash.

The amounts of these materials used by Mr. Webb were stated to be as follows:

Dissolved Bone Black, -----	4,000	pounds.
Bone and Blood,-----	6,205	"
Sulphate of Ammonia,-----	1,251	"
Muriate of Potash, -----	2,000	"
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	13,456	"

Knowing the composition of these goods it is easy to calculate what should be the composition of the mixture.

	Total.
In 4,000 lbs. Bone Black are 764 lbs. Phos. Acid, { " 6,205 " " and Blood " 458 " " " " 443 " Nitrogen, {	1,222
In 1,251 lbs. Sulphate of Ammonia are 258 lbs. " " 2,000 " Muriate of Potash are 1,045 lbs. Potash,	701 1,045

The percentage composition will be as follows:

Phosphoric Acid,-----	9.09
Nitrogen, -----	5.20
Potash, -----	7.76

In the following table this *calculated composition* is compared with the actual composition of the samples drawn by Mr. Webb and by the Station Agent.

	Formula.	Mr. Webb's Sample.	Station Sample.
		1538.	1539.
Nitrogen, -----	5.20	5.02	5.09
Soluble Phosphoric Acid, -----		6.15	6.20
Reverted Phosphoric Acid, -----		1.75	2.65
Insoluble Phosphoric Acid, -----		1.54	.62
Total Phosphoric Acid, -----	9.09	9.44	9.47
Potash, -----	7.76	8.05	8.10
Valuation per ton, -----		\$40.01	\$41.09

The composition of the two samples is almost identical. They contain somewhat more potash and phosphoric acid and a little less nitrogen than corresponds to the formula but the agreement is as close as could be expected.

The total cost of the materials (13,456 pounds) delivered in New Haven was stated by Mr. Webb to be \$215.06 or \$31.96 per ton.

1508. Home-mixed Tobacco Fertilizer. Sampled and sent by Abner Trask, East Hartford. It is stated to consist of a mixture of

2,000 pounds Cotton Seed Meal.
1,000 " Cotton Hull Ashes.
500 " Lime.
500 " Plaster.
<hr/>
4,000

and to cost \$25.42 per ton. Whether this includes the cost of mixing is not stated.

ANALYSIS.

	1508.
Nitrogen, -----	3.37
Soluble Phosphoric Acid, -----	Trace
Reverted Phosphoric Acid, -----	2.08
Insoluble Phosphoric Acid, -----	.12
Potash, -----	5.44
Cost per ton, -----	25.42
Valuation, -----	\$23.40

THE CHARTER OAK FERTILIZER.

1452. Made by Paul Thomson, Colt's Dyke, Hartford. Stock of S. W. Elliot, Salisbury.

ANALYSIS.

Water,	22.54
Organic matter,	12.70
Ash,.....	64.76
	100.00

The guaranteed and actual composition are as follows :

	Found.	Guaranteed.
Nitrogen,	1.18	1.6
Soluble Phosphoric Acid,	Trace	2.5
Reverted Phosphoric Acid,.....	.95	
Insoluble Phosphoric Acid,.....	.28	
Potash,.....	2.67	2.0
Sand and Soil,.....	43.51	

More than three-fifths of this fertilizer are made up of useless material, sand and water. Its cost is \$30, its valuation \$8.26.

BONE MANURES.

Station No.	Name or Brand.	Manufacturer.	Dealer.	Sampled and sent by
1436	Buffalo Chemical Co's Pure Ground Bone.	Buffalo Fertilizer Works, L. L. Crocker, Buffalo, N. Y.	J. E. Leonard, Jewett City.	Station Agent.
1433	E. Frank Coe's Ground Bone.	E. Frank Coe, 16 Burling Slip, N. Y.	John A. Paine, Danversville.	Station Agent.
1525	Lister's Crescent Bone.	Lister Brothers, Newark, N. J.	Swan's Seed Store, Bridgeport.	Station Agent.
1461	Ground Bone.	H. Preston & Sons, Greenpoint, L. I.	Harvey Elliott, N. Guilford.	Station Agent.
1420	Preston's Ground Bone.	Williams, Clark & Co., 109 Pearl St., N. Y.	Brewster & Burnett, Norwich.	Station Agent.
1507	Bone and Potash.	J. F. Silliman, New Canaan.		Station Agent.

BONE MANURES.

Number.	Name or Brand.	Nitrogen.			Potash.			Finer than than 1-6 ineh.			Cost per ton. Coarser than 1-6 ineh.	Saturation per ton.
		Field.	Altd.	Photc.	1-50 Inch.	1-25 Inch.	1-12 Inch.					
1436	Buffalo Chemical Works' Pure Ground Bone	4.26	23.53	2.05	37	26	37	-	-	-	\$40.00	\$39.51
1433	E. Frank Coe's Ground Bone	2.63	15.42	2.05	64	16	12	8	0	0	38.00	26.30
1525	Lister's Crescent Bone	3.65	12.64	----	44	19	21	15	1	1	30.00	26.00
1461	Ground Bone	3.39	21.61	----	2	2	7	11	78	8	32.00	27.95
1420	Preston's Ground Bone	4.25	13.29	----	50	17	16	9	8	6	34.00	20.18
1507	Bone and Potash	1.65	8.40	4.90	58	15	20	1	1	1		

SUPERPHOSPHATES, SPECIALS AND GUANOS.

Station No.	Name or Brand.	Manufacturer.	Dealer.	Sampled and Sent by
1510	Buffalo Fertilizer Work's Super-phosphate. [2]	Buffalo Fertilizer Works, Buffalo, N. Y.	S. E. Case, New Hartford.	Station Agent.
1411	Buffalo Fertilizer Work's Ammoniated Bone Superphosphate.	Buffalo Fertilizer Works, Buffalo, N. Y.	James Greenfield, New London.	"
1509	Buffalo Fertilizer Work's Ammoniated Bone Superphosphate.	Buffalo Fertilizer Works, Buffalo, N. Y.	E. E. Meeker, New Preston.	
1528	Baker's Acid Phosphate, 17-19 per cent.	Baker's Acid Phosphate, 17-19 per cent.	E. E. Meeker, New Preston.	
1551	Bay State Fertilizer.	Clark's Cove Guano Co., New Bedford, Mass.	Lewis Chamberlain, Coventry.	A. H. Ponroy, Coventry.
1469	Bowker's Fish and Potash.	Bowker Fertilizer Co., New York and Boston.	L. H. Kierns, Bristol.	Station Agent.
1494	Russell Coe's Soluble Bone Phosphate.	Phos-Russell Coe Fertilizer Co., 88 St., New York.	M. S. Baldwin, Naugatuck.	
1491	Russell Coe's Soluble Bone Phosphate.	Russell Coe Fertilizer Co., 88 St., New York.	E. E. Meeker, New Preston.	
1492	David's Brand A. A. Ammoniated Bone Superphosphate.	Russell Coe Fertilizer Co., 88 St., New York.	"	
1519	Dissolved Bone Black.	G. B. Forrester, 1639 Front St., New York.	S. B. Wakeman, Saugatuck.	
1416	Farmer's Friend Ammoniated Dissolved Bone.	Read & Co., New York.	M. V. B. Lamb, Norwich.	Station Agent.
1498	Miles' T. X. L. Superphosphate.	G. W. Miles Co., Milford.	G. W. Miles Co., Milford.	Henry Brown, New Haven.
1454	G. W. Miles' Fish Fertilizer and Potash.	" " "	Burtis & Mead, New Canaan.	Station Agent.
1524	Mapes' High Grade Bone Super-phosphate.	Mapes' Formula and Peruvian Guano Co., New York.	Mapes' Branch, Hartford.	"
1523	Mapes' Pure Fine Bone Dissolved in Sulphuric Acid.	Mapes' Formula and Peruvian Guano Co., New York.	" "	"
1448	Original Coe's Superphosphate of Bradley Fertilizer Co., Boston, Mass.	Smith & Sons, West Cornwall.	" "	"
1450	Preston's Ammoniated Bone Super-phosphate.	H. Preston & Sons, Greenpoint, L. I.	" "	"
1506	Stearns' Ammoniated Bone Super-phosphate.	The Platt Mill Co., Waterbury.	" "	"

SUPERPHOSPHATES, SPECIALS AND GUANOS.—*Continued.*

Station No.	Name or Brand.	Manufacturer.	Dealer.	Sampled and Sent by
1430	Stearns' Fish and Potash, No. 1.	Stearns & Co., New York.	J. E. Leonard, Jewett City.	Station Agent.
1504	Union County Fertilizer.	Union County Fertilizer Co., Linden, N. J.	Union Fertilizer Co.	Stephen Sanford, Redding Ridge.
1470	U. S. Superphosphate.	Lister Bros., Newark, N. J.	Swan's Seed Store, Bridgeport.	Station Agent.
1435	Fish and Potash.	Williams, Clark & Co., New York.	John A. Paine, Danielsonville.	"
1550	Americus Ammoniated Bone Super-phosphate.	" " "	Andrew Kingsbury, Coventry.	A. H. Ponneroy, Coventry.
1462	Baker's Complete Corn Manure.	H. J. Baker & Bro., 215 Pearl St., New York.	G. S. Smith, Kent.	Station Agent.
1447	Bradley's Complete Manure for Potatoes and Roots.	Bradley Fertilizer Co., Boston, Mass.	Strong & Tanner, Winsted.	"
1497	Davidge Brand Potato Manure.	Russell Coe Fertilizer Co., New York.	M. S. Baldwin, Naugatuck.	M. S. Baldwin, Naugatuck.
1512	Forrester's Corn Manure.	G. B. Forrester, 169 Front St., New York.	Manufacturer.	S. B. Wakeman, Saugatuck.
1514	Forrester's Onion Manure.	G. B. Forrester, 169 Front St., New York.	" "	" "
1513	Forrester's Potato Manure.	G. B. Forrester, 169 Front St., New York.	" "	" "
1418	Mapes' Grass and Grain Spring Top Dressing.	Mapes' Formula and Peruvian Guano Co., New York.	J. P. Barstow, Norwich.	Station Agent.
1483	Mapes' Potato Manure.	Mapes' Formula and Peruvian Guano Co., New York.	Josiah Hawkins, Southport.	Edward Osborn, Fairfield.
1455	Mapes' Complete Manure for General Use.	Mapes' Formula and Peruvian Guano Co., New York.	Mapes' Branch, Hartford.	Station Agent.
1458	Mapes' Tobacco Manure, Connecticut Brand.	Mapes' Formula and Peruvian Guano Co., New York.	" "	"
1511	Shockbridge Potato Manure.	Bowker Fertilizer Co., New York and Boston.	Hubbell & Bradley, Saugatuck.	S. B. Wakeman, Saugatuck.
1428	Americus Brand Potato Fertilizer.	Williams, Clark & Co., New York.	J. A. Paine, Danielsonville.	Station Agent.

SUPERPHOSPHATES, SPECIALS AND GUANOS.

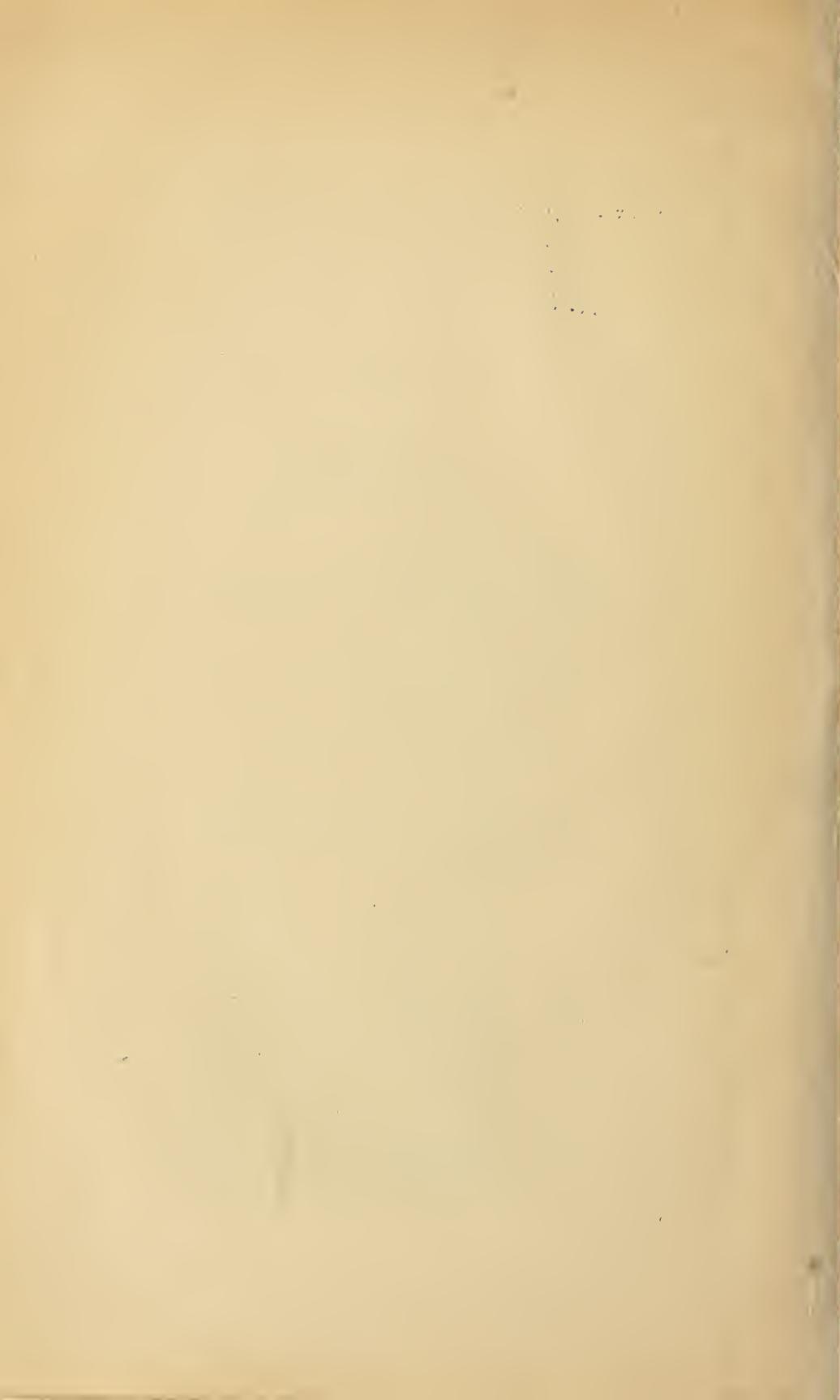
Name or Brand.	NITROGEN.		PHOSPHORIC ACID.				POTASH.		Cost per ton.	Valuation per ton.	
	Found.	Guaranteed.	Reverted.	Insoluble.	Total Phos.	Guaranteed Phos. Acid.	Guaranteed Phos. Acid.	Round.	Guaranteed.		
1510 Buffalo Fertilizer Works Superphos. [2]	11.43	2.44	.47	14.34	-----	13.87	11.0	1.52	1.4	1.53	\$30.00
1411 Buffalo Fertilizer Works Ammoniated Bone Superphosphate	8.43	1.68	.86	10.96	13.0	10.11	10.0	1.73	1.0	1.61	40.00
1509 Buffalo Fertilizer Works Ammoniated Bone Superphosphate	7.82	1.82	2.23	11.87	-----	9.64	11.0	1.64	1.0	-----	40.00
1528 Baker's Acid Phosphate	18.57	.46	.97	18.10	-----	19.03	17.0	-----	-----	-----	32.22
1511 Bay State Fertilizer	7.56	1.68	1.90	11.14	-----	9.24	9.0	3.42	2.0	2.82	40.00
1469 Bowler's Fish and Potash	4.66	2.18	1.14	7.98	8.0	6.84	-----	4.94	4.0	8.60	30.65
1494 Russell Coe's Soluble Bone Phosphate	6.53	3.90	5.49	14.92	12.0	10.43	10.0	2.14	1.5	2.18	26.42
1491 Russell Coe's Soluble Bone Phosphate	4.88	4.30	14.06	12.0	9.76	10.0	1.51	1.5	3.88	31.00	24.20
1492 Davidge Brand A. A. Ammoniated Bone Superphosphate	2.14	2.1	7.06	3.39	3.07	13.52	12.0	10.45	9.0	2.38	30.00
1519 Forrester's Dissolved Bone Black	17.75	.18	.08	18.01	-----	17.93	-----	-----	1.5	2.28	35.00
1416 Farmer's Friend Ammoniated Dissolved Bone	7.15	2.11	1.18	10.44	-----	9.26	8.0	2.14	1.1	2.47	35.00
1498 Miles' L. X. L. Superphosphate	6.27	1.72	3.59	11.58	-----	7.99	7.99	-----	1.98	3.51	27.87
1454 Geo. W. Miles' Fish Fertilizer and Potash	6.16	1.06	2.09	9.31	-----	7.22	5.0	3.23	3.0	4.01	26.40
1524 Mapes' High Grade Bone Superphosphate	3.80	.93	33.48	-----	-----	32.55	33.0	-----	-----	58.00	26.28
1523 Mapes' Pure Fine Bone Dissolved in Sulphuric Acid	5.34	15.25	1.86	22.40	-----	20.59	12.0	10.36	9.0	1.87	35.00
1448 Original Coe's Superphosphate of Lime	2.69	2.0	8.56	1.80	1.76	12.12	-----	8.16	10.0	1.85	42.94
1450 Preston's Ammoniated Bone Superphos.	2.57	2.5	6.48	1.68	2.02	10.18	-----	8.01	8.0	4.15	29.38
1506 Steam's Ammoniated Bone Superphos.	2.65	2.2	7.71	1.49	.91	10.11	-----	9.20	8.0	2.83	26.76

* In New York. Freight to Saugatuck, \$1.50.

SUPERPHOSPHATES, SPECIALS AND GUANOS—*continued.*

Name or Brand.	NITROGEN.		Phosphoric Acid.		Potash.		Chlorine.	Cost per ton.	Saturation Agent.	Saturation per ton.
	Found.	Guaranteed.	Soluble.	Revereted.	Insoluble.	Phos. Acid.	Total Pounds.	Actual Pounds.	Found.	Guaranteed.
1430 Stearn's Fish and Potash, No. 1	2.54	2.5	2.80	2.10	5.02	9.92	8.0	4.90	3.0	4.86
1501 Union County Fertilizer	1.08	1.6	3.38	1.55	5.36	10.29	8.0	4.93	2.0	2.39
1470 U. S. Phosphate	1.72	1.3	5.37	1.78	.55	7.70	—	7.15	6.0	2.52
1435 Fish and Potash	3.35	3.3	.52	4.07	2.71	7.49	3.0	4.59	—	4.64
1550 American Ammoniated Bone Superphos.	2.22	1.6	7.61	2.21	.74	7.30	10.0	9.82	—	9.0
1462 Baker's Complete Corn Manure	4.70	4.9	6.04	.40	19.56	—	—	6.44	6.3	6.4
1447 Bradley's Complete Manure for Potatoes and Root Crops	3.14	3.3	8.58	1.61	1.39	11.58	—	10.19	8.0	6.38
1497 Davidge Brand, Potato Manure	2.09	2.5	5.92	5.39	3.85	15.16	—	11.31	8.0	5.22
1512 Forrester's Corn Manure	4.82	3.9	8.87	.11	.22	3.20	—	8.98	6.5	4.68
1514 Forrester's Onion Manure	6.21	5.3	7.79	.09	.12	8.00	—	7.88	3.5	7.65
1513 Forrester's Potato Manure	4.91	3.5	5.68	.28	.27	6.23	—	5.96	5.3	10.42
1418 Mapes' Grass & Grain Spring Top Dressing	5.54	4.4	7.68	3.10	.84	11.62	7.0	10.78	—	6.07
1433 Mapes' Potato Manure	4.27	3.7	8.70	2.72	.69	12.11	8.0	11.42	—	7.75
1453 Mapes' Complete Manure for General Use	5.71	5.0	7.70	3.32	1.97	12.99	10.0	11.02	—	3.69
1458 Mapes' Tobacco Manure, Conn. Brand	5.43	4.7	6.75	3.03	.98	10.76	7.7	9.78	—	7.79
1511 Stockbridge Potato Manure	3.81	3.3	6.73	.57	.95	8.31	—	7.36	8.0	6.40
1428 Williams, Clark & Co's Vegetable Fertilizer	3.40	3.0	6.16	1.19	.14	7.49	—	7.35	5.0	8.55

* In New York. Freight to Saugatuck, \$1.50.





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